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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,561	10/24/2003	Jung Yong Kang	2950-0266P	7518
2292 7590 06/01/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER CHU, RANDOLPH I	
			ART UNIT 2624	PAPER NUMBER
			NOTIFICATION DATE 06/01/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/691,561	Applicant(s) KANG, JUNG YONG	
	Examiner Randolph Chu	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 23 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-12 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-3, 5-12 and 14-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5-12 and 14-19 are rejected under 35 USC 103(a) as being unpatentable over Duruöz et al. (US Patent 6,658,056) in view of Morel (US Patent 6,498,814) and Acharya (US Patent Application 2003/0021486).

Duruöz et al. teaches checking an encoding type of an original source image (col. 12 lines 25-42).

Duruöz et al. does not teach checking an encoding type of a discrete cosine transformed macro block; converting the encoding type of said macro block into a frame type or a field type if the checked two encoding types are different; and enlarging said converted macro block using the inverse discrete cosine transform.

Morel teaches converting the encoding type of said macro block so that the encoding type of said macroblock coincides with the encoding type of said original source image if the checked two encoding types are different (col. 2 line 53 – col. 3 line 7).

Acharya teaches enlarging macro block using the inverse discrete cosine transform (para. [0027]).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert the encoding type to match types and enlarge macro block using IDCT in the method of Duruöz et al.

The suggestion/motivation for doing so would have been to reduce in the number of operations to reduce cost (Morel, col. 3 lines 8-13) and encoding the image is accordance with the type of impute allows for better image reproduction and more efficient techniques to accomplish the same results with better or similar enlarged image quality (Acharya, para. [0002]). Performing an IDCT is a standard process as to be able to output the final image.

Therefore, it would have been obvious to combine Morel and Acharya with Duruöz et al. to obtain the invention as specified in claim 1.

Regarding claim 2, Duruöz et al. teaches the encoding type of said original source image is identified as either a field type or a frame type by using at least progressive_sequence information or picture_structure information (col. 12 lines 25-42).

Regarding claim 3, Duruöz et al. teaches the encoding type of said macro block is identified as either a field type or a frame type by using DCT_type information contained in a header of said macro block (col. 12 lines 25-42).

Regarding claim 6, Duruöz et al. teaches original source image is received through a digital broadcast (col.8 lines 7-19).

Regarding claim 7, Duruöz et al. teaches original source image is reproduced from an optical disk (col.8 lines 7-19).

In regard claims 8 and 9, Duruöz et al. modified by Morel and Acharya teaches all the limitations of claim 1 (see above) except limitation of claims 4, 8 and 9.

Regarding claim 8, Morel teaches that if the encoding type of said original source image is a frame type and the encoding type of said macro block is a field type, then converts the encoding type of said macro block from the field type into a frame type (col. 2 line 53 – col. 3 line 7).

Regarding claim 9, Morel teaches that if the encoding type of said original source image is a field type and the encoding type of said macro block is a frame type, then converts the encoding type of said macro block from the frame type into a field type (col. 2 line 53 – col. 3 line 7).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert the encoding type to match types in the method of Duruöz et al. modified by Morel and Acharya.

The suggestion/motivation for doing so would have been to reduce in the number of operations to reduce cost (Morel, col. 3 lines 8-13).

Therefore, it would have been obvious to combine Morel and Acharya with Duruöz et al. to obtain the invention as specified in claims 8 and 9.

In regards claim 10, Duruöz et al. teaches detecting means for detecting an encoding type of a macro block (col. 12 lines 25-42).

Duruöz et al. does not teach converting means for converting the encoding type of said macro block to either a field type or a frame type;

control means for detecting an encoding type of an original source image, and controlling said converting means so that the encoding type of said macro block is converted into the encoding type of said original image, if the encoding type of said macro block and said original source image are different; and

enlarging means for enlarging said macro block received from said converting means using the inverse discrete cosine transform.

Morel teaches converting means for converting the encoding type of said macro block to either a field type or a frame type; and

control means for detecting an encoding type of an original source image, and controlling said converting means so that the encoding type of said macro block is converted into the encoding type of said original image source, if encoding type of said macro block and said original source image are different (col. 2 line 53 – col. 3 line 7).

Acharya teaches enlarging means for enlarging said macro block received from said converting means using the inverse discrete cosine transform (para. [0027]).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert the encoding type to match types and enlarge macro block using IDCT in the method of Duruöz et al.

The suggestion/motivation for doing so would have been to reduce in the number of operations to reduce cost (Morel, col. 3 lines 8-13) and encoding the image is accordance with the type of impute allows for better image reproduction and more efficient techniques to accomplish the same results with better or similar enlarged image quality (Acharya, para. [0002]). Performing an IDCT is a standard process as to be able to output the final image.

Therefore, it would have been obvious to combine Morel and Acharya with Duruöz et al. to obtain the invention as specified in claim 10.

Regarding claim 11, Duruöz et al. teaches said detecting means identifies the encoding type of said macro block as either a field type or a frame type by examining DCT_type information contained in a header of said macro block. (col. 12 lines 25-42).

Regarding claim 12, Duruöz et al. said control means identifies the encoding type of said original source image as either a field type or a frame type by examining at least progressive_sequence information or picture_structure information (col. 12 lines 25-42).

Regarding claim 15, Duruöz et al. teaches said original source image is received through a digital broadcast (col.8 lines 7-19).

Regarding claim 16, Duruöz et al. teaches said original source image is reproduced from an optical disk (col.8 lines 7-19).

In Regard claims 14,17 and 18, Duruöz et al. modified by Morel and Acharya teaches all the limitations of claim 10 (see above) except limitation of claims 14, 17 and 18.

Regarding claim 14, Morel teaches that said enlarging means enlarges said macro block using the inverse discrete cosine transform without converting the encoding type of said macro block if the detected two encoding types are identical (col. 2 line 53 – col. 3 line 7).

Regarding claim 17, Morel teaches that if the encoding type of said original source image is a field type and the encoding type of said macro block is a frame type, then said converting means converts the encoding type of said macro block from the frame type into a field type (col. 2 line 53 – col. 3 line 7).

Regarding claim 18, Morel teaches that if the encoding type of said original source image is a field type and the encoding type of said macro block is a frame type,

then said converting means converts the encoding type of said macro block from the frame type into a field type (col. 2 line 53 – col. 3 line 7).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert the encoding type to match types in the method of Duruöz et al. modified by Morel and Acharya.

The suggestion/motivation for doing so would have been to reduce in the number of operations to reduce cost (Morel, col. 3 lines 8-13).

Therefore, it would have been obvious to combine Morel and Acharya with Duruöz et al. to obtain the invention as specified in claims 14, 17 and 18.

Regarding claim 19, Duruöz et al. teaches means for checking an encoding type of an original source image of a discrete cosine transformed macro block (col. 12 lines 25-42).

Regarding claim 19, Duruöz et al. does not teach means for converting the encoding type of said macro so that the encoding type of said macro block coincides with the encoding type of said original source image if the checked two encoding types are different and means for enlarging said converted macro block using the inverse discrete cosine transform.

Morel teaches that means converts the encoding type of said macro block so that the encoding type of said macro block coincides with the encoding type of said original source image, if the checked two encoding types are different (col. 2 line 53 – col. 3 line 7).

Acharya teaches enlarging means for enlarging said macro block received from said converting means using the inverse discrete cosine transform (para. [0027]).

Duruöz et al., Morel and Acharya are analogous art because they are in the "same field of endeavor", image processing that deal with DCT/IDCT.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to convert the encoding type to match types and enlarge macro block using IDCT in the method of Duruöz et al.

The suggestion/motivation for doing so would have been to reduce in the number of operations to reduce cost (Morel, col. 3 lines 8-13) and more efficient techniques to accomplish the same results with better or similar enlarged image quality (Acharya, para. [0002]).

Therefore, it would have been obvious to combine Morel and Acharya with Duruöz et al. to obtain the invention as specified in claim 19.

Response to Amendment

3. In response to applicant's amendment received on 3/23/2007, all requested changes to the claims have been entered.

Response to Argument

4. Applicant's arguments filed on 3/23/2007 have been fully considered but they are not persuasive.

Applicant's argue on page 6 of the response that the disclosure of Morel does not describe converting an encoding type of a macroblock to coincide with an encoding type of an original source image.

The examiner disagrees. The prior art of Morel teaches converting a field type format into a frame type format and vice versa that is required for the input and output macroblock. A macroblock is classified as field type coded or frame type coded depending on how the four blocks are extracted from it. And it is obvious to match coding type of input image according to encoding type of original image in order to decode it.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

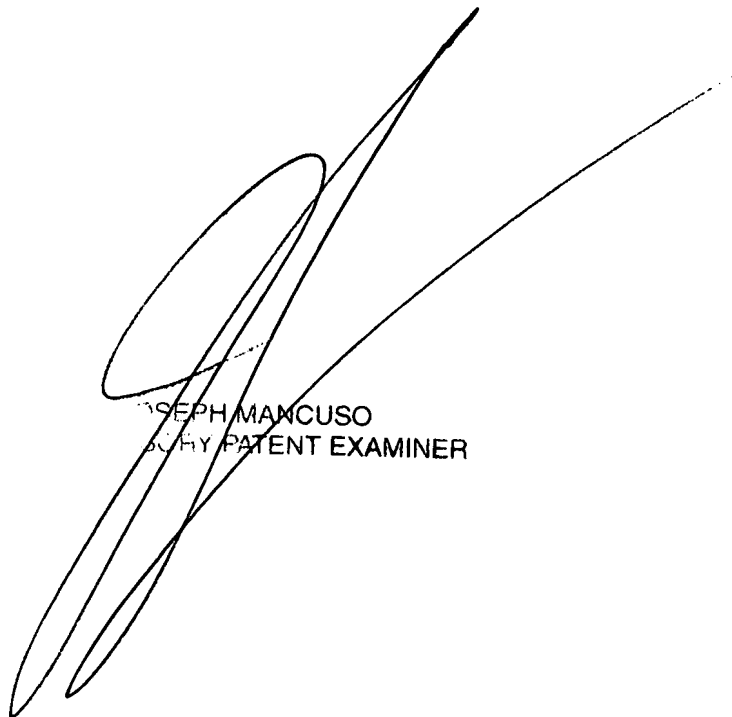
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randolph Chu whose telephone number is 571-270-1145. The examiner can normally be reached on Monday to Thursday from 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695/7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RIC/



JOSEPH MANCUSO
JURY PATENT EXAMINER